If you invest $5000 for 10 years at 3.5% APR, how much will it be worth if it is compounded

(a) Monthly $A = 5000\left(1 + \frac{0.035}{12}\right)^{120} \approx 7091$

$A = P\left(1 + \frac{r}{c}\right)^{t}$

(b) continuously $A = Pe^{rt}$

$A = 5000e^{0.035 \cdot 10} \approx 7095$

Logarithms

$y = 10^x$

x	y
1	10
2	100
3	1000
4	10,000

~~$\sqrt{x^2}$~~

$\log 10^x = \log 100$

$x = \log 100$

$x = 2$

$y = \log(x)$

x	y
7	0.84509804
10	1
47	1.6720978 58
100	2
1000	3
10000	4

~~$\log 10^x$~~ $= \log 16$

$x = 1.20\ldots$

$7^x = 47$

$10^{0.84509804} = 7$, $10^{1.67209785 6} = 47$

$\left(10^{0.84509804}\right)^x = 10^{1.67209785 6}$

$10^{0.84509804x} = 10^{1.67209785 8}$

$0.84509804x = 1.67209785 8$

$x = \frac{1.67209785 8}{0.84509804}$ $\frac{\log 47}{\log 7}$

$7^x = 47$ $x = \frac{\text{Log Answer}}{\text{Log Base}}$

$\log 7^x = \log 47$

$x \log 7 = \log 47$

$x = \frac{\log 47}{\log 7}$

$\boxed{x = \frac{\log 47}{\log 7}}$

$8^x = 50$

$x = \log 5$

$10^x = 150$

$16 = 8^x$

$e^x = 15$

$8^x = 50$

$\log 8^x = \log 50$

$x = \frac{\log 50}{\log 8} = 1.88$

$10^x = 150$

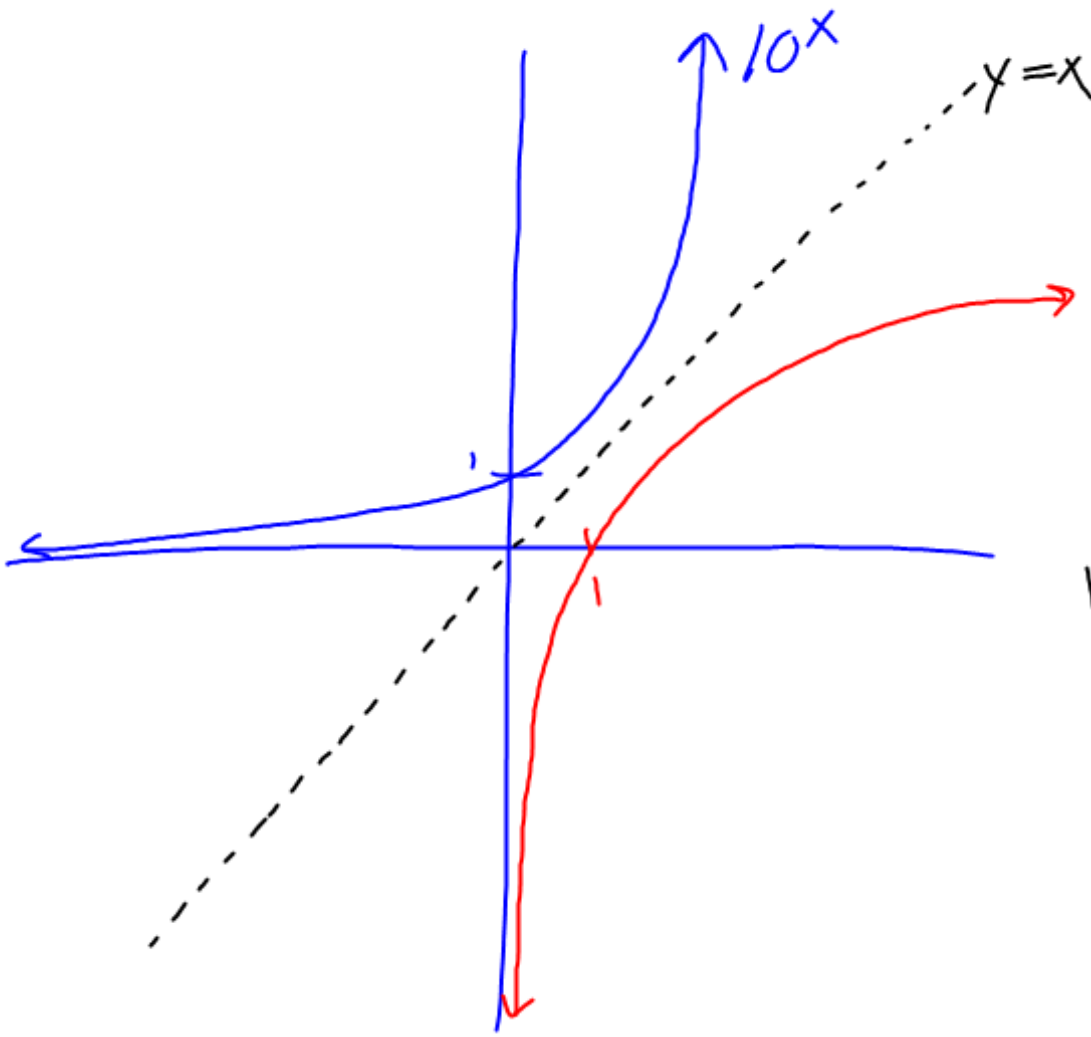
$x = \frac{\log 150}{\log 10} = 2.176$

$16 = 8^x$

$x = \frac{\log 16}{\log 8} = 1.33$

$e^x = 15$

$x = \frac{\log 15}{\log e} = 2.708$



$2^2 = 4$ • $7^x = 47$ exp. form

$\sqrt{4} = 2$ • $\log_7 47 = x$ log. form

• $x = \frac{\log 47}{\log 7}$ Answer

HW

Sect 3.2

#1-19(odd), 25-30(1), 36, 40, 45-48